

REMARKS

Claims 1-22 are currently pending in this application. Claims 1, 4, 7, 15, 17-20 and 22 have been amended. No new matter has been added by these amendments. Applicants have carefully reviewed the Office Action and respectfully request reconsideration of the claims in view of the remarks presented below.

Claim Rejections Under 35 U.S.C. §112

Claims 1-22 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. More specifically, claims 1-19 were cited as mixing two different classes of claims. To address this issue, the preamble of claim 1 has been amended to recite only “a method for detecting ventricular electrical events.” Claims 7 and 15 were cited as lacking antecedent basis for “detecting cardiac ischemia” and “the onset of ischemia,” respectively. Accordingly, claims 7 and 15 have been amended to depend from claim 6. Claims 20 and 22 were cited as inferentially claiming a “bipolar lead” and a “lead.” Claim 22 was further cited as being incomplete with respect to the calculating of total energy values. Claim 20 has been amended to positively recite a “bipolar lead” and a “lead.” Claim 22 has been amended to remove references to a “bipolar lead” and a “lead” and to recite “means for calculating total energy values.”

Claim Rejections Under 35 U.S.C. §101

Claims 20-22 were rejected under 35 U.S.C. §101, as being directed to non-statutory subject matter. Specifically, the recitation of a lead “mounted within the atria” was cited as an inferential inclusion of the atria as part of the claimed invention. Claim 20 has been amended to recite a “lead adapted to contact the atria” and “a lead adapted to contact the heart.” Claim 22 has been amended to remove references to a “bipolar lead mounted within the atria” and a “lead mounted within the heart.”

Claim Rejections Under 35 U.S.C. §102

Claims 1, 6, 18 and 20 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,531,768 (Alferness).

Independent claims 1 and 20 relate to systems and method for detecting ventricular electrical events. Method claim 1 recites, sensing near-field signals using a bipolar lead contacting the atria and detecting atrial events therein; sensing far-field signals, except during blanking periods corresponding to the detected atrial events, using a lead contacting the heart, to provide far-field signals having substantially only ventricular events; and examining the ventricular events within the far-field signals to identify repolarization events. System claim 20 recites subject matter similar to claim 1.

Alferness discloses sense amplifiers that sense signals from the heart and output corresponding electrogram signals to a subtractor that combines the signals to produce a “signal representing electrical activity of the heart between the right atrium and the right ventricle.” Column 4, lines 26-28. It is significant to note that operation of the sense amplifiers in Alferness are not affected any cardiac events. In other words, the Alferness senses amplifiers continuously sense signals. It is also noted that contrary to the position presented in the Office Action, the signal output by the subtractor would **not** “inherently leave substantially only ventricular events,” but would instead include **both** atrial and ventricular events.

In view of the foregoing, Applicants submit that Alferness does not disclose the combination of features and elements recited in claim 1 and 20, including at least, the sensing of near-field signals in the atria to detect atrial events and the sensing of far-field signals, except during blanking periods corresponding to the detected atrial events, to provide signals having substantially only ventricular events. Accordingly, Applicants request reconsideration of the §102 rejections of claims 1 and 20, and their respective dependent claims.

Claim Rejections Under 35 U.S.C. §103

Claims 1, 6, 18 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Alferness in view of U.S. Patent No. 4,799,486 (DuFault).

As stated above, Alferness discloses a system with sense amplifiers that operate unaffected by any cardiac events, to continuously sense signals from the heart. DuFault discloses the same type of system.

Accordingly, for the same reasons presented above with respect to Alferness alone, Applicants submit that neither Alferness nor DuFault, either alone or in combination, teach or suggest the combination of elements and features recited in independent claims 1 and 20. Therefore, Applicants request reconsideration of the §103 rejections of claims 1 and 20 and dependent claims 6 and 18.

Claims 8, 15-17 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Alferness or Alferness in view of DuFault. Claim 2-5 and 10-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Alferness (or Alferness in view of DuFault) in view of U.S. Patent No. 6,381,493 (Stadler). Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Alferness (or Alferness in view of DuFault) in view of U.S. Patent No. 5,159,932 (Zanetti). Claims 9, 21 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Alferness (or Alferness in view of DuFault) in view of U.S. Patent No. 5,213,106 (Lerner).

Regarding claims 2-5, 7-17, 19 and 21, in view of the foregoing analysis of independent claims 1 and 20 in view of Alferness alone and Alferness in combination with DuFault, Applicants believe that the rejections under §103 are rendered moot as each of these dependent claims depends from an allowable independent base claim.

Regarding independent claim 22, for the same reasons presented above with respect to claims 1 and 20, Applicants submit that neither Alferness, DuFault, nor Lerner, either alone or in combination, teach or suggest the combination of elements and features recited in independent claim 22. Therefore, Applicants request reconsideration of the §103 rejections of claim 22.

Double Patenting

Claims 1, 6, 7, 8, and 15-20 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of copending application serial no. 10/603,398. Claims 2-5 and 10-14 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of copending application serial no. 10/603,398 in view of Stadler. Claims 9, 21 and 22 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of copending application serial no. 10/603,398 in view of Lerner.

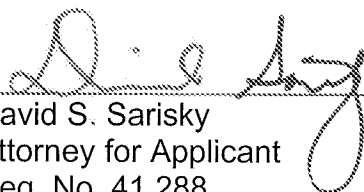
Applicants herein submit a Terminal Disclaimer disclaiming the terminal part of the statutory term of any patent granted on the present application, which would extend beyond the expiration date of the full statutory term of any patent issuing from copending application serial no. 10/603,398. In view of the remarks presented above and the Terminal Disclaimer, it is respectfully submitted that claims 1-22 are in condition for allowance.

CONCLUSION

Applicants have made an earnest and bona fide effort to clarify the issues before the Examiner and to place this case in condition for allowance. Therefore, allowance of Applicants' claims 1-22 is believed to be in order.

Respectfully submitted,

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Date



David S. Sarisky
Attorney for Applicant
Reg. No. 41,288
818-493-3369

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